

## Total Hip Replacement Surgery

### What is a total hip replacement?

- This is a surgical procedure where the diseased cartilage and bone of a hip joint is replaced with a hip joint prosthesis (artificial hip components)
- The hip socket is replaced with an artificial socket.
- The hip femoral head is removed and replaced with a metal stem & head that is placed into the hollow of the femur.
- The artificial socket is called the acetabular prosthesis and the metal head and stem are called the femoral prosthesis
- Hip replacements can be cemented or uncemented.
- In cemented hip replacements the acetabular and femoral prosthesis is placed on to the bony surfaces with a bone cement called methylmethacrylate
- In uncemented hip replacements, the acetabular and femoral prosthesis has microscopic pores that allow the surrounding bone to grow onto the prosthesis.
- Your surgeon will discuss the pros and cons of uncemented and cemented prosthesis

### Who is a candidate for Total Hip Replacement Surgery?

- The most common indication for total hip replacements is osteoarthritis of the hip causing progressive hip pain and loss of quality of life
- Osteoarthritis (diseased cartilage) of the hip may be associated with age or genetics - this is known as primary osteoarthritis
- Osteoarthritis (OA) can also be caused secondarily by other conditions:
  - post-traumatic OA
  - Congenital abnormalities of the hip e.g Slipped Upper Femoral Epiphysis (SUFE)
  - Hip Avascular necrosis due to loss of blood supply to the hip

- Inflammatory arthritis e.g Rheumatoid or Psoriatic arthritis
- Infections e.g. Tuberculosis
- When the hip pain affects the patients quality of life (night pain, pain that prevents simple activities of daily living) the patient becomes a candidate for a total hip replacement
- Once a patient is a candidate for hip replacement careful consideration of medical conditions (such as heart and lung conditions) are made to ensure the patient is safe for the surgery.
- A Total hip replacement is an elective procedure. The decision to have a hip replacement done is an informed decision where the surgeon and patient discuss the risks and benefits of surgery, the surgical procedure and post-surgical rehabilitation and the anticipated long-term outcome of the surgery.

### **Hip replacements complications:**

- Blood clots in the lower limb veins (known as deep vein thrombosis or DVT)
- These blood clots can travel to the lungs, this is known as a Pulmonary Embolism or PE. Although rare a PE can cause respiratory failure and death.
- Hip dislocations (instability)
- Leg length differences
- Sciatic nerve injuries - this may result in a dropped foot
- Infections (superficial wound infection or deep infection involving the hip replacement)
- Scarring and limitation of hip range of motion
- Persistent pain despite the hip replacement
- Heterotopic ossification - new bone formation in the muscles surrounding the hip.
- Loosening of hip replacement
- Bleeding
- Anaesthetic related complications such as heart arrhythmias, stroke, liver toxicity, pneumonia and death.

## **Preparation for the procedure?**

The preoperative evaluation generally includes a review of all medications being taken by the patient. Anti-inflammatory medications, including aspirin, are often discontinued one week prior to surgery because of the effect of these medications on platelet function and blood clotting. Other preoperative evaluations include complete blood counts, electrolytes (potassium, sodium, chloride), blood tests for kidney and liver functions, urinalysis, chest X-ray, EKG, MRSA (methicillin-resistant Staphylococcus Aureus) screen and a physical examination. Your physician will determine which of these tests are required, based on your age and medical conditions. Any indications of infection, severe heart or lung disease, or active metabolic disturbances such as uncontrolled diabetes may postpone or defer total hip joint surgery.

Total hip joint replacement can involve blood loss. Patients planning to undergo total hip replacement often will donate their own (autologous) blood to be stored for transfusion during the surgery. Should blood transfusion be required, the patient will have the advantage of having his or her own blood available, thus minimising the risks related to blood transfusions.

Excess body weight may be a risk factor for infection, increased intra-operative blood loss, deep vein thrombosis/pulmonary emboli, knee stiffness and persistent knee pain following the surgery. These patients may also have a much slower post-operative rehabilitation recovery period. If at all possible, patients with excess body weight should consider a weight loss program to reduce the risks of Surgery.

## **Recovery after surgery**

A total hip joint replacement takes approximately two to four hours of surgical time. The preparation prior to surgery may take up additional time. After surgery, the patient is taken to a recovery room for immediate observation that generally lasts between one to four hours. Upon stabilization, the patient is transferred to a hospital room or Intensive Care Unit.

During the immediate recovery period, patients are given intravenous fluids. Intravenous fluids are important to maintain a patient's electrolytes and replace any fluids lost during surgery. Using the same IV, antibiotics might be administered as well as pain medication. Patients also will notice tubes draining fluid from the surgical wound site. The amount and character of the drainage are important to the doctor and can be monitored closely by the nurse in attendance. A dressing is applied in the operating room and will remain in place for 2 weeks. The dressing is changed earlier only if the wound is oozing or the dressing has come loose.

Pain-control medications are commonly given through a patient-controlled-analgesia (PCA) pump whereby patients can actually administer their own dose of medications on demand. Pain medications occasionally can cause nausea and vomiting. Antinausea medications may then be given.

Measures are taken to prevent blood clots in the lower extremities. Patients will be given compression (TED) stockings after surgery. Compression pumps are often added, which help by forcing blood circulation in the legs. Patients are encouraged to actively exercise the lower extremities in order to mobilize venous blood in the lower extremities to prevent blood clots. Medications are given to thin the blood in order to further prevent blood clots.

Patients may also experience difficulty with urination. This difficulty can be a side effect of medications given for pain. As a result, catheters are often placed into the bladder to allow normal passage of urine.

Immediately after surgery, patients are encouraged to frequently perform deep breathing exercises and coughing in order to avoid lung congestion and the collapse of tiny airways in the lungs. Patients are also given a "blow bottle," whereby active blowing against resistance maintains the opening of the breathing passages.

## **Rehabilitation process after total hip joint replacement**

After total hip joint replacement surgery, patients often start physical therapy immediately! On the first day after surgery, it is common to begin some minor physical therapy while sitting in a chair. Eventually, rehabilitation incorporates stepping, walking, and climbing. Initially, supportive devices such as a walker or crutches are used. Patients are usually home within 3-5 days of surgery. On discharge, the patient can mobilise independently with a walking aid.

Physical therapy is extremely important in the overall outcome of any joint replacement surgery. The goals of physical therapy are to prevent contractures, improve patient education, and strengthen muscles around the hip joint through controlled exercises. Contractures that can cause limitation of joint motion result from scarring of the tissues around the joint. Contractures do not permit a full range of motion and therefore impede the mobility of the replaced joint. Patients are instructed not to strain the hip joint with heavy lifting or other unusual activities at home. Specific techniques of body posturing, sitting, and using an elevated toilet seat can be extremely helpful. Patients are instructed not to cross the operated lower extremity across the midline of the body (not crossing the leg over the other leg) because of the risk of dislocating the replaced joint. They are discouraged from bending at the waist and are instructed to use a pillow between the legs when lying on the non-operated side in order to prevent the operated lower extremity from crossing over the midline. Patients are given home exercise programs to strengthen the muscles around the buttock and thigh. Most patients attend outpatient physical therapy for a period of time while incorporating home exercises regularly into their daily living.

### **Postoperative instructions**

Patients will continue to use supportive devices as monitored and recommended by the therapist and attending physician. Medications are likely to be given to further prevent blood clots in the legs. These include Aspirin, Xarelto or Clexane injections. It is important to note that patients may be at risk to develop blood clots for as long as **6-12 weeks** post

surgery.

Gradually, patients become more confident and less dependent on supportive devices. Patients are instructed to look for signs of infection, including swelling, warmth, redness, or increased pain in or around the surgical site. The patient should notify the doctor's office immediately if these changes are noted or if there is an injury to the hip. The sutures, which are usually staples, are removed 2 weeks after the operation.

On discharge from the hospital, you will have a physiotherapy follow up-date, an appointment to see the wound sister (usually 2 weeks after surgery) and an appointed to see Dr Chivers or Dr Coetzee. We will keep you updated/informed of all the relevant appointments.

Please note that you very welcome to contact the rooms at any time should you have any questions or concerns.

### **Prognosis of total hip joint replacement**

Patient education is important to ensure the longevity of the replaced hip. Strenuous exercises such as running or contact sports are discouraged since these activities can injure the replaced hip. Swimming is ideal for improving muscle strength and promoting mobility and endurance.

Patients should be aware and notify any caregivers that they have an artificial joint. Antibiotics are recommended during any invasive procedures, whether surgical, urological, gastroenterological, or dental. Infections elsewhere in the body should also be treated to prevent spreading of infection into the joint. This is important because bacteria can pass through the bloodstream from these sites and cause infection of the hip prosthesis.

Hip joint replacement surgery is one of the most successful joint surgeries performed today. In well-selected patients, who are appropriate candidates for total hip replacements, the

procedure lasts at least 15 years in most patients. Long-term results have been improving impressively with new devices and techniques. The future will provide newer techniques which will further improve patient outcomes, mobility, and lessen the potential for complications.